Chapter 3
The European Green Deal: opportunities and prospects after the Covid-19 crisis

Hans Bruyninckx, Gülçin Karadeniz and Jock Martin

Introduction

In 2013, with the adoption of the Seventh Environment Action Programme (7th EAP), the European Union (EU) endorsed its long-term sustainability goal and turned it into a vision with a horizon of 2050 to guide its environmental action:

‘In 2050, we live well, within the planet’s ecological limits. Our prosperity and healthy environment stem from an innovative, circular economy where nothing is wasted and where natural resources are managed sustainably, and biodiversity is protected, valued and restored in ways that enhance our society’s resilience. Our low-carbon growth has long been decoupled from resource use, setting the pace for a safe and sustainable global society’ (European Commission 2013).

This vision of long-term sustainability was also enshrined in the European Green Deal (EGD) presented by Commission President Ursula von der Leyen in December 2019. Almost two years after the EGD was presented, this chapter makes the case for the fundamental transformations towards sustainability needed across European societies and how the roadmap for EGD implementation can help to achieve that.

In parallel, the socio-economic consequences of the Covid-19 pandemic have led the European Union to embark on an ambitious recovery plan that, inter alia, supports short-term economic recovery as well as the longer-term economic transformation and socially just transition objectives of the Green Deal. The chapter also reflects on the opportunities and trade-offs between the immediate economic and social measures undertaken to mitigate the impact of the pandemic and the longer-term socio-economic-ecological objectives of the EGD. It explores practical ways to maximise opportunities to achieve fundamental transformations to sustainability over coming decades while minimising such trade-offs.

1. Fundamental transitions are needed to achieve sustainability

The environmental and sustainability challenges that Europe faces today are rooted in global developments stretching back over decades. Now known as the ‘Great Acceleration’ (Steffen et al. 2011, 2015), the period after the 1950s is unique in human history, marked by unprecedented and accelerating human-induced global change. During this period, the Great Acceleration of social and economic activity, or liberal
globalisation, has transformed humanity’s relationship with the environment. The Great Acceleration has undoubtedly delivered major benefits, alleviating suffering and enhancing prosperity in many parts of the world by lifting more than a billion people out of absolute poverty. Yet, the same developments have also caused widespread damage to the climate and nature’s ecosystems because they were based on fundamentally unsustainable economic practices.

Many global and European assessments warn of being very close to tipping points, urging us to use this narrow window of opportunity in the next decade to scale up measures to protect nature, lessen the impacts of climate change and radically reduce our consumption of natural resources. Our planet is experiencing an exceptionally rapid loss of biodiversity, with more species threatened with extinction than at any point in human history (IPBES 2019). Many of the changes in the global climate system observed since the 1950s are similarly unprecedented over decades to millennia (IPCC 2018). The recent Intergovernmental Panel on Climate Change (IPCC) report, issuing a code red for climate, asserts that climate change is affecting every region in the world, with the average global temperature likely to reach or exceed 1.5 degrees of warming (IPCC 2021).

Similar concerns are voiced with regards to global resource use. According to the International Resource Panel, current global natural resource use and management are unsustainable, while implementing resource efficiency and sustainable consumption and production policies can generate stronger economic growth, improve well-being and support a more equal distribution of income (IRP 2019).

The overarching challenge of the 21st century is to achieve global sustainability that balances socio-economic, environmental and climate considerations. Over the past 70 years, advanced economies in Europe and elsewhere in the world have achieved high levels of human development (living well) but at the expense of poor environmental sustainability (not within the environmental limits of the planet). As developing countries catch up economically, this situation is expected to worsen, manifesting itself in accelerating climate change, degradation of nature and increased pollution, with manifold impacts on people’s health and well-being (EEA 2019c). The 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals (SDGs) aim to serve as ‘an action plan for people, planet and prosperity’ (UN 2015).

Europe and sustainability

Europe has always played a pivotal role in global changes and policies. Today, it continues to consume more resources and contribute more to environmental degradation than many other world regions. To satisfy these high consumption levels, Europe depends on resources extracted or used in other parts of the world, such as water, land, biomass and other materials (EEA and FOEN 2020 and EEA 2019d).

The European Environment Agency’s report ‘The European environment – State and Outlook 2020’ (SOER) shows that incremental changes have resulted in progress in
some areas but not nearly enough to meet our long-term goals. To achieve long-term sustainability, key production and consumption systems such as food, mobility and energy need to be made sustainable, and Europe has the knowledge and technologies to reduce the environmental impacts of our activities as well as the policy tools to increase the uptake of such solutions and facilitate their upscaling (EEA 2019a). Our future well-being and prosperity depend on these, as well as on our ability to harness society-wide action to bring about change and create a better future.

A key finding of SOER 2020 is that environment policies have been more effective in reducing environmental pressures (such as emissions of pollutants from various sources or extraction of raw materials) than in protecting biodiversity and ecosystems, human health and well-being. For example, EU legislation has helped achieve significant reductions in pollutant emissions to air and bathing water, resulting in cleaner air and bathing water. Yet despite the successes of European environmental governance, persistent problems remain and the outlook for Europe’s environment in the coming decades is discouraging.

The persistence of major environmental challenges can be explained by a variety of related factors. First, environmental pressures remain substantial despite progress (in Europe) in reducing them. This implies a need to go beyond incremental efficiency improvements and to substantially strengthen the implementation of environmental policies and their integration into socio-economic policies to achieve their full benefits. The complexity of environmental systems can also mean that there can be a considerable time lag between reducing pressures and seeing improvements in climate, biodiversity and natural systems, such as oceans.

But perhaps the most important factor is that the challenges are inextricably linked to lifestyles and economic activities, in particular those providing Europeans with necessities such as food, energy and mobility (Figure 1).

The current decade has a pivotal role to play in putting the EU on the trajectory towards achieving sustainability by 2050. The 2020s have to be the decade where ecological-economic-social considerations are addressed together when designing and implementing policies and fostering innovation. It is also the decade where we need to ensure that Europe invests in trajectories that deliver fundamental change, such as carbon neutrality, and avoid lock-ins and outdated carbon technologies. And this needs to happen with the goal of strengthening social capital and societal resilience across Europe.

These multiple transformations – social, technological, economic – are set to pose societal challenges as well as opportunities in coming decades. They need to be navigated together, while maintaining economic development and employment, and ensuring that the costs and benefits of transformative change are equally distributed across society.

The EU has achieved unprecedented levels of prosperity and well-being in recent decades, with its social, health and environmental standards ranking among the
highest in the world (EEA 2019a). Maintaining this position does not necessarily have to depend on economic growth. The key question is whether our societies can develop and grow in quality (e.g., purpose, solidarity and empathy) rather than quantity (e.g., material standards of living) and in a more equitable way (EEA 2021a). And can a policy framework, the European Green Deal for example, become a catalyst for EU citizens to create a society that consumes less and grows in other than material dimensions?

2. The European Green Deal: Europe’s response to environmental, climate and societal challenges

Since the 2010s, public awareness of environment- and climate-related concerns has been increasing in Europe. Extreme weather events — heat waves, floods, forest fires — and pollution affect millions of Europeans. According to the latest opinion polls, European citizens identify climate change as the single most serious problem facing the world (European Commission 2019a). Europeans, and youth in particular, have
increasingly been calling for more decisive and effective action on climate change and environmental degradation (European Commission 2020i). Small, local demonstrations have turned into global inter-generational movements facilitated through digital tools. Europeans young and old have taken to the streets, calling for European leaders to step up ambitions and actions.

The European elections of May 2019 took place against this backdrop. The outcome and the distributions of the seats reflected public concerns over environmental degradation and climate change (Euronews 2019; Financial Times 2019). Against this same backdrop, Ursula von der Leyen, President of the European Commission, was given the mandate to put together a team and assign responsibilities in November 2019 (Euractiv 2019; Schiermeier 2019).

The European Green Deal announced by the von der Leyen Commission is the European Union’s response to environmental, climate and socio-economic challenges.

‘It is a new growth strategy that aims to transform the EU into a fair and prosperous society [our emphasis], with a modern, resource-efficient and competitive economy where there are no net emissions of greenhouse gases in 2050 and where economic growth is decoupled from resource use.’ (European Commission 2019b)

The European Green Deal Communication structures the work areas to be covered by the European Green Deal as follows (Figure 2):

Figure 2  European Green Deal elements

Source: European Commission 2019b.
With its different work areas, the European Green Deal offers a comprehensive and integrated policy approach and sets goals and ambition levels with milestones within a timeline setting 2030 as a steppingstone to 2050. In addition to an initial roadmap for policies and measures needed to achieve the European Green Deal, the Communication states that ‘all EU actions and policies will have to contribute to the European Green Deal objectives.’ The Communication recognises that the transition towards sustainability requires significant investments, with both public and private funds needing to be directed towards climate and environmental action. Additional funds through new financial instruments and approaches to sustainable finance are identified as key to financing the green transition.

It also recognises the need for global coordination and action, stating that the European Green Deal is ‘an integral part of this Commission’s strategy to implement the United Nations’ 2030 Agenda and the Sustainable Development Goals’.

As such, the European Green Deal provides the most comprehensive, coherent and ambitious policy framework in the world to achieve sustainability by 2050. It is an impressive vision for the European Union and its 450 million citizens in 27 Member States. This trajectory towards sustainability requires cooperation and implementation across multiple policy areas as well as governance levels spanning the coming decades.

Policy proposals under the European Green Deal1

The objectives listed in the European Green Deal Communication have been translated into a series of policy packages, such as the EU Biodiversity Strategy for 2030 and the Farm to Fork Strategy for food. Published by the European Commission in May 2020, the EU Biodiversity Strategy for 2030 (European Commission 2020a) is a long-term plan to protect and reverse the degradation of ecosystems. It represents a significant shift from previous strategies as it puts the focus on resilience and tackles the key drivers of biodiversity loss, such as the unsustainable use of land and sea, overexploitation of natural resources, pollution, and invasive alien species.

The Biodiversity Strategy was presented together with the Farm to Fork Strategy, as the food system including agricultural land use impact ecosystems. It is also true that nature conservation and reversing current trends cannot be achieved without the agricultural sector. The food system with its farming and production practices needs to be a part of the solution. Several studies, including the Dasgupta Review and the EEA report State of Nature in the EU, also point out that, to halt environmental degradation and biodiversity loss, concrete actions need to be taken outside nature conservation areas both globally and in Europe (Dasgupta 2021; EEA 2020a).

The Farm to Fork Strategy (European Commission 2020b) aims to reduce the environmental and climate footprint of the EU food system and strengthen its resilience, protecting citizens’ health and ensuring the livelihoods of those dependent on the

---

1. This subsection presents only a selection of key policy initiatives and proposals under the European Green Deal.
food system. The strategy sets concrete targets, including reductions in pesticide and fertilizer use, and an increased share of agricultural land under organic farming.

These actions are complemented by another key pillar of the European Green Deal, namely the Zero Pollution Action Plan for water, air and soil in May 2021 (European Commission 2021b). This plan plays an instrumental role in connecting the dots. European action on pollution will no longer be limited to a specific medium (air, soil or water) or to the pollutant and its source. It will be seen as a whole, moving from one medium to another. A series of actions will be taken to reduce pollution and pollutant releases to the environment, amending existing legislation such as the Bathing Water Directive and coming up with new strategies such as the Soil Strategy. The Zero Pollution Action Plan builds on the EU Chemicals Strategy which aims to better protect citizens and the environment and boost innovation for safe and sustainable chemicals (European Commission 2020g).

Unsurprisingly, the European Green Deal foresees action in other sectors linked to the production and consumption system. Presented in March 2020 as a further component of the European Green Deal, the Circular Economy Action Plan (European Commission 2020c) is key to reducing pressures on the environment and climate. The plan includes a wide range of actions addressing product design, circular economy processes, sustainable consumption and waste prevention.

These efforts are enhanced by the European Industrial Strategy (European Commission 2020d), presented in March 2020 the day before the World Health Organization (WHO) upgraded Covid-19 to a pandemic. Updated in May 2021 to factor in Covid-19 implications, the Industrial Strategy aims to deliver on three key priorities: maintaining European industry’s global competitiveness and a level playing field (at home and globally) making Europe climate-neutral by 2050 and shaping Europe’s digital future. A dedicated strategy will help SMEs in this ‘twin transition’ towards sustainability and digitalisation (European Commission 2020e).

Ambitions and actions are currently most pronounced on the climate change side, where the von der Leyen Commission has put forth key pieces of EU legislation, in particular the European Climate Law. With this legislation, climate neutrality by 2050 turned from a political aspiration into a legally binding commitment for the EU (European Commission 2020f). It also recognises that the 2020s are a make-or-break decade for the EU to meet its commitments under the 2015 United Nations Paris Agreement. The EU is leading by example in setting targets for reducing net greenhouse gas emissions by 55% by 2030 compared with 1990. To achieve these targets, the EU is putting in place an extensive set of policy measures ranging from effort sharing, emission trading, land use and forestry to transport fuels (the so-called ‘Fit for 55’ package (European Commission 2021c). The package is also expected to create new opportunities for innovation, investments and jobs across the EU economy.

The ambitious targets need urgent and immediate action in many domains, including transport, energy and buildings. The energy efficiency of buildings will need to be increased. Public transport will need to be enhanced. The share of renewable and clean
energy sources will need to increase further. The way we plan and connect cities, build or renovate buildings, move goods and people, and manage our forests and seas all need to be addressed. In February 2021, another vital piece of legislation, the EU Climate Adaptation Strategy, was presented. This aims to enable smarter, faster and more systematic adaptation (European Commission 2021a). These proposals received wide support in the European Parliament and the Council of the European Union. The signal sent to Member States and economic sectors is unequivocal: get ready to pick up pace.

Financing the twin transition

Without appropriate funding this green and digital transition cannot happen. Transition will require change and new investments, some of which will affect people and sectors dependent on certain activities. The most common example is for coal-producing regions. Phasing out coal mining will affect jobs and the workforce in these regions. But the transition needed is far from being limited to a handful of sectors like energy or the automotive sector. In fact, our entire economy with all its activities will need to be redesigned. Not only will new jobs need to be created, but the workforce will also need to acquire new skills for these jobs. It will also require research, innovation and the adoption of new technologies.

To facilitate this transition, the von der Leyen Commission proposed a Sustainable Europe Investment Plan, also referred to as the European Green Deal Investment Plan (European Commission 2020h). To achieve the goals set by the European Green Deal, the plan will mobilise at least €1 trillion in sustainable investments over the next decade. As part of the plan, the Just Transition Mechanism, will target a fair and just green transition, mobilising at least €65 billion until 2027 to support those affected the most by the transition.

‘To achieve the ambition set by the European Green Deal, there are significant investment needs. The Commission has estimated that achieving the current 2030 climate and energy targets will require €260 billion of additional annual investment, about 1.5% of 2018 GDP. This flow of investment will need to be sustained over time. The magnitude of the investment challenge requires mobilising both the public and private sector.’ (European Commission 2019b)

The estimates mentioned in the European Green Deal take into account only a fraction of the funds needed for the transition. They do not cover social costs or adaptation needs, not to speak of the costs of inaction. In the face of the fundamental transitions needed, it is clear that EU funds will need to be complemented by both national and private funds.

For private investors to direct funds into sustainable activities, agreement needs to

---

3. These estimates are conservative, as they do not consider, for instance, the investment needs for climate adaptation or for other environmental challenges, such as biodiversity. They also exclude the public investment needed to address the social costs of the transition and the costs of inaction.
be reached on what activities are considered sustainable. The European Commission initiated work in the sustainable finance domain in 2017, establishing a high-level expert group as part of the follow-up to the 2015 Paris Agreement. The main outcome of these efforts so far is an EU Taxonomy Regulation that, inter alia, contains a common categorisation system for establishing a list of activities considered sustainable. Though this highly technical work may not be the most visible part of the European Green Deal packages, it is set to play a crucial role in enabling the transition.

A first set of activities related to climate mitigation and adaptation objectives was published in April 2021. Transition technologies such as nuclear energy and gas will be kept under expert review and their inclusion in the taxonomy addressed in follow-up legislation as needed. The taxonomy will be extended in coming years to cover the other four environmental objectives under this policy agenda – biodiversity, water, the circular economy and pollution prevention –, with a view to facilitating sustainable investments beyond climate.

Furthermore, by the end of 2021, the European Commission is committed to publishing a report on the provisions for a social taxonomy. This is part of wider efforts targeting a more inclusive EU sustainable finance framework that includes empowering retail investors and small and medium enterprises to access sustainable finance (European Commission 2021d).

The implementation challenge: from policy proposal to change on the ground

The policy packages mentioned above are just a selection, with many other proposals included under each strategy or action plan. Some have already been presented, others will be put forth in coming months. As a whole, the European Green Deal umbrella offers a coherent and ambitious policy framework, outlining a common trajectory for the EU towards 2050.

Every time a new policy proposal is announced, one question comes up repeatedly: *is it enough? Are the targets set in the proposal ambitious enough?* The simple answer is ‘more can be done’. However, this would mean ignoring the complexity of the issues we face. To bring about the multiple transformations needed, policies and measures need to be not only implemented fully, but also be implementable.

Setting unachievable and unrealistic targets, whether in Europe or globally, or without the tools to monitor progress or achieve them, only undermines trust in these processes. On the other hand, according to science, ambitious policies are what we need. We need policies that stimulate the speeding-up and scaling-up of the breakthrough solutions. Our greenhouse gas emissions assessments, for example, already shows that significant additional effort is needed to cut emissions (EEA 2021b). While we have already reached some targets in designating protected areas in the marine environment, essential biodiversity concerns remain. The key question is not necessarily whether the target is ambitious enough or whether we need to do more of the same, but what we will do differently to make sure we achieve it.
Policy proposals by the European Commission are merely a first step in a long journey towards sustainability. These proposals need to go through the European legislative processes and be adopted by the European Parliament and the Council. In most cases, Member States then need to transpose the EU law into their national legislation and translate the policy goals into concrete actions.

Another factor is time. Sustainability cannot be achieved overnight. It requires time and a coherent series of policies and measures — all of which need to be aligned towards the same goal. The cost of inaction or delayed action should be factored into the decision-making process. The links between the European Green Deal actions need to maximise synergies, while reducing trade-offs and delivering desired social outcomes. Against this backdrop, crafting the appropriate policy packages, with the need to speed up systemic change, will be central.

The social dimension

It is also clear that this transition towards a sustainable Europe will affect some groups more than others — just as the coronavirus or environmental hazards, air pollution or climate impacts do. Lower-income regions and communities are more exposed to environmental health hazards, such as air pollution (EEA 2019b). Similarly, some groups are more likely to be affected by and are more vulnerable to a broad scope of environmental issues. The social dimension needs further defining and more precise targets to play a central role in the policy-driven transition efforts, with policies framed across different political levels to address important social inequalities (Figure 3).

The key to achieving sustainability will depend on Europe’s ability to tackle social inequalities and to provide ‘help’ or rather levers to those affected by the transition, and more broadly to those who are marginalised in a variety of ways in the current economic-social model. The Just Transition Mechanism and its investment instruments will help mobilise funds to this end. Nevertheless, these funds need to trickle down to areas and groups where this kind of support is needed the most.

Against this policy backdrop, Covid-19 was declared a pandemic in early 2020. The sustainability challenge was already immense, requiring a fundamental transition of key socio-technical systems in our economy. Covid-19 was a global shock exposing not only our health vulnerability but also our capacity to cope with such massive shocks. Almost one and a half years into the pandemic, we are still faced with a (physical and mental) health crisis, an economic crisis and a corona-fatigued society.
Covid-19 came with a huge social and economic cost. The pandemic hit many economic sectors hard – tourism, cultural activities, horeca – as well as the livelihoods of those dependent on them (Dauderstädt, this volume). From our social interactions to daily routines – how and where we work or attend classes – many aspects of our lives have changed. It has, in other words, come at a very serious cost to society.

The pandemic has also highlighted, yet again, the interconnected nature of our planetary systems, from the zoonotic origins of disease and their relation to our natural environment and food systems, to the greater vulnerability to disease resulting from social inequality, poor air quality, pollution and other environmental factors. It has shed light not only on the weaknesses of our current systems but also on the opportunities for future innovation and lifestyle changes.

---

3. **Covid-19, the environment and climate change**

Covid-19 came with a huge social and economic cost. The pandemic hit many economic sectors hard – tourism, cultural activities, horeca – as well as the livelihoods of those dependent on them (Dauderstädt, this volume). From our social interactions to daily routines – how and where we work or attend classes – many aspects of our lives have changed. It has, in other words, come at a very serious cost to society.

The pandemic has also highlighted, yet again, the interconnected nature of our planetary systems, from the zoonotic origins of disease and their relation to our natural environment and food systems, to the greater vulnerability to disease resulting from social inequality, poor air quality, pollution and other environmental factors. It has shed light not only on the weaknesses of our current systems but also on the opportunities for future innovation and lifestyle changes.

---

4. This section is based on an EEA briefing (EEA 2020b) on what we know about the short-term effects of Covid-19 on our environment. Its aim was to support decision-making in the post-Covid recovery plans.
Biodiversity, food systems and zoonotic diseases

Evidence points to Covid-19 being a zoonotic disease, with the emergence of such zoonotic pathogens linked to environmental degradation and related human interaction with animals in the food system. About 60% of human infectious diseases are of animal origin (Woolhouse and Gowtage-Sequeria 2005), while three-quarters of new and emerging infectious diseases are transmitted to humans from animals (Taylor et al. 2001). These include viruses responsible for significant global mortality, such as the human immunodeficiency viruses (HIV) HIV-1 and HIV-2; the Rift Valley fever virus and influenza viruses such as bird flu and swine flu.

More than 50% of zoonotic infectious diseases that have emerged since 1940 have been associated with measures to intensify agriculture (Rohr et al. 2019). The intensive production of animal protein involves rearing concentrated populations of genetically similar animals in close proximity, often in poor conditions, fostering vulnerability to infection (UNEP 2020).

Covid lockdown measures have also given us a glimpse of how animal and plant species react to less human disturbance. Less disturbance in both urban and remote areas (less recreational tourism) gives ecosystems and habitats a chance to recover and provides new spaces and niches for species to occupy.

Greenhouse gas emissions: short-term benefits and lessons for the future

Covid-19 has had a direct impact on energy use and greenhouse gas (GHG) emissions at both global and EU levels. Due to the effect of Covid-19 on the economy in 2020, we expect a significant reduction in GHG emissions in the EU compared to 2019.

The transport sector, a key source of GHG emissions, has been particularly affected by the pandemic. Demand for passenger transport has declined as a result of international travel restrictions and reduced commuting, tourism and business travel. The International Road Transport Union (IRU) expects a 57% decline in turnover from road passenger transport activity in Europe for 2020 compared to the previous year. As for air transport, figures from the International Air Transport Association (IATA) show a 65.2% drop in air passenger kilometres in Europe for the year-to-date ending July compared to the same period in 2019 (IATA 2020). These figures point to a significant decline in transport-related GHG emissions in 2020.

According to initial estimates from the International Energy Agency (IEA) (IEA 2020), global energy demand in 2020 could fall by around 6%. The strong contraction in GDP and energy use might play a role in the EU achieving its 20% renewable energy target and its objective to improve energy efficiency by 20% in 2020, in addition to the effects of policies dedicated to reaching these objectives.

While the short-term reductions may make the EU’s 2020 targets achievable, achieving any longer-term goals will continue to require political decisions to prioritise recovery
measures contributing significantly to climate change mitigation. Unsurprisingly, a more recent IEA report (IEA 2021) explores whether the rebound in activity often linked to recovery measures risks pushing CO2 emissions to a new high and to what degree new policies will be able to curb a rebound in emissions.

Air quality, noise and (un)healthy environments

One of the most evident short-term effects of Covid-19 lockdowns has been the dramatic improvement in air quality, especially in some of the world’s most polluted cities. Although air quality levels appear to be returning to near-pre-lockdown levels in many parts of the world as strict lockdown measures are lifted, this period has revealed some of the benefits achievable through a lasting and sustainable reduction in air pollution.

The EEA’s air quality and Covid-19 viewer tracks average weekly and monthly concentrations of nitrogen dioxide (NO2) and particulate matter (PM10 and PM2.5). Data shows that concentrations of NO2 — a pollutant mainly emitted by road transport — fell sharply in many European countries where lockdown measures were implemented in the spring of 2020.

Concentrations of PM10 also fell across Europe in this period, though decreases were less pronounced. Whereas NO2 emissions are largely attributable to road transport, PM concentrations are influenced by emissions from natural sources as well as man-made sources such as residential heating, agriculture and industry, which are less likely to have been affected by lockdown restrictions.

Exposure to air pollution is associated with cardiovascular and respiratory disease, both pre-existing health conditions identified as fatal risk factors for Covid-19 patients (Yang et al. 2020). As such, long-term exposure to air pollution might be expected to increase humans’ susceptibility to Covid-19, with previous studies having demonstrated, for example, exposure to particulate matter as playing a role in worsening the impact of respiratory viruses (Sciomer et al. 2020).

Recent studies have explored the evidence for links between air pollution and high Covid-19 mortality rates. An Italian study has argued that, since long-term exposure to air pollution, including PM, ozone (O3) and sulphur dioxide (SO2), weakens the immune defences of the upper airways, this would facilitate the entry of the SARS-CoV-2 virus into the lower airways resulting in infection with Covid-19 (Conticini et al. 2020). However, as there are significant limitations in early studies, these findings must be interpreted with care.

Meanwhile, exposure to hazardous chemicals has been indirectly linked to vulnerability to Covid-19. In this context, a recent study has suggested that long-term, low-dose exposure to mixtures of chemicals may lead to immunodeficiency in the face of epidemics and pandemics (Tsatsakis et al. 2020).

---

Environmental noise levels are reported over a prolonged period of time, as health effects – for instance sleep disturbance and heart problems – appear when exposure is long-term. However, the short-term reduction in noise during lockdown has allowed many people to experience the immediate benefits of quieter cities, with possible implications for future behaviour and policy.

Consumption and resource use

Some existing strategies to reduce resource use such as the sharing economy and mass or shared transport solutions have virtually collapsed during the Covid-19 crisis. After the 2008 financial crisis, material use decreased, mainly as a consequence of the breakdown of the construction sector in several countries. This has not been the case in the Covid-19 crisis. Indeed, recovery packages targeting building renovation and infrastructure development may lead to higher material consumption.

The ongoing IT-intensive technological revolution may well be intensified and/or accelerated by the Covid-19 crisis as, for example, options for physical communication are reduced, IT-based practices such as teleworking are extended, and systems designed to track people in response to contagion are deployed. This may have long-term effects on travel patterns.

Lower levels of economic activity during lockdowns are likely to lead to lower emissions to water from industry, while emissions from schools and workplaces are likely to shift towards households. There may be less water stress in specific areas in Europe depending on the impacts on agriculture and energy production. Reduced tourism is also likely to lead to lower emissions to water along European coasts and at other tourist destinations.

The downturn in economic activity coincided with sharp falls in global oil prices, making it significantly cheaper for manufacturers to produce plastic from virgin, fossil-based materials rather than using recycled materials. The economic viability of the European and global plastics recycling market has come under significant pressure. Lower market demand for recycled plastics has also complicated the efforts of many of Europe’s local municipalities to manage their waste sustainably.

While disposable plastic products have played an important role in preventing the spread of Covid-19, in the shorter term, the upsurge in demand for these items may challenge EU efforts to curb plastic pollution and move towards a more sustainable and circular plastics system.

Social inequalities in the spotlight

Similar to environmental hazards like air and water pollution, Covid-19 is not affecting all socio-economic groups equally (Dauderstädt, this volume). Several factors may have increased the vulnerability of those with low socio-economic status. These groups are
more likely to live in poor-quality overcrowded accommodation, and thus less likely to be able to follow social distancing recommendations. They are also more likely to have jobs that cannot be carried out from home, such as working in healthcare, care homes, supermarkets, factories and public transport. In addition, the same group is more likely to endure unstable working conditions and to face financial uncertainty due to the job cuts linked to Covid-19. Such individuals are under significant pressure to continue working even when they fall ill, in order to safeguard household incomes.

Beyond the higher risk of transmission under such conditions, sustained stress also weakens the immune system, increasing susceptibility to a range of diseases (Patel et al. 2020). Lower-income communities in urban areas are likely to be exposed to higher levels of air pollution and noise, associated with respiratory and cardiovascular diseases, and hypertension, respectively (EEA 2019b). These conditions are all fatal risk factors for Covid-19 (Yang et al. 2020), suggesting that people with a low socio-economic status have greater susceptibility to Covid-19 mortality (Patel et al. 2020).

Urban life

More than three-quarters of European citizens live in cities, and city life has changed dramatically due to Covid-19. Cities around the world already face multiple challenges, including the need to adapt to a changing climate. Recovery plans need to seize the opportunity to align environmental and climate objectives to society’s resilience to current and future shocks.

New research is looking into how urban nature areas increase the resilience of cities, maintain well-being in urban populations, while also enabling social distancing. Cities around the world need to find ways to function better during such disturbances. Thus, maintaining or increasing space for nature in cities and keeping it accessible to the public should be part of the sustainability agenda as a priority.

Digital innovation will play a key role in helping authorities and communities to shape tomorrow’s cities. For example, data from the Copernicus European Earth Observation programme will help to measure progress and monitor environmental policies, as well as to formulate future policies by providing models and outlining future climate impacts.

4. Looking ahead: from vulnerability and uncertainty towards recovery and resilience

The multiple crises faced by Europe and the world over almost 15 years – the Great Recession, financial debt, climate change, biodiversity loss, Covid-19 – point to a new reality: the challenges we face are huge, systemic, inter-connected and have different dynamics, timescales and societal impacts. These crises have also increased social inequalities and undermined social cohesion and resilience. Addressing their associated challenges requires inter-linked responses of similar magnitude, ambition and urgency. The 2019 European Green Deal is a prime example of such responses, connecting
as it does the social, economic, environment, climate and governance dimensions of sustainable development.

More recently we have seen other examples of ambitious policy responses. For example, to tackle the economic crisis triggered by Covid-19, in 2020 the European Commission proposed to complement the long-term EU budget with a recovery plan – NextGenerationEU (see Alcidi and Corti, Verdun and Vanhercke, both this volume). Together, they constitute the largest stimulus package ever financed in Europe: a total of €1.8 trillion (in 2018 prices) to help rebuild a post-Covid-19 Europe. The extra resources are also aimed at achieving a greener, more digital and more resilient Europe.

Through 2020 and into 2021, the European Union and its Member States have been adopting policy proposals and taking action to implement recovery plans set to play a vital role in determining the path Europe will follow in the decades to come and whether Europe will achieve its environmental, economic and social objectives in the aftermath of the Covid-19 shock. As governments try to plot courses out of the pandemic, with a particular reliance on significant stimulus packages, a focus on reshaping our unsustainable production and consumption systems is vital, especially for food, mobility, energy and housing.

A study by the German Federal Environment Agency (Burger et al. 2020) evaluated 130 scientific studies and relevant policy statements on the design and effectiveness of green economic recovery programmes. According to the study:

‘There is broad consensus across the studies analysed that the billion-euro economic recovery programmes for overcoming the economic crisis are a unique opportunity to pave the way for more climate protection, the conservation of ecosystems and the preservation of resources. Should this opportunity be missed, and the economic recovery programmes revert to the status quo ante, for example by promoting fossil fuel activities, destroying natural habitats or wasting resources, it will become impossible to achieve the Paris climate targets. We will also be laying the foundations for future crises caused by climate change and the overexploitation of our planet, with even more catastrophic consequences, especially for future generations.’ (Burger et al. 2020)

These recovery packages will need to be flanked by other measures such as sustainable finance markets and sustainable fiscal reform to maintain the transition momentum until 2050 and ensure that the benefits of transformation are shared more equally across society.

5. Conclusion

Achieving the EU’s 2050 sustainability vision is still possible, but it will require a decisive shift in the character and ambition of actions (EEA 2019a). That means both
strengthening established policy tools and building on them with innovative governance approaches. There are multiple pathways to achieve sustainability by 2050, and the EEA does not have all the answers. Nevertheless, we believe that the EU can go a long way towards meeting its 2050 ambitions, by implementing its EU and global commitments up to 2030.

Furthermore, the EGD provides the basis for developing more systemic, long-term policy frameworks and binding targets on issues like the food system, chemicals and land use. Moreover, Europe cannot achieve its sustainability goals in isolation. The EU has significant diplomatic and economic influence which it can use to promote the adoption of ambitious agreements in areas such as biodiversity and resource use.

More effort is needed to foster innovation throughout society to trigger new ways of thinking and living. Scaling up investments and reorienting finance will be key to achieving sustainability transitions, Europeans stand to gain hugely from this – both because of the avoided harm to nature and society, and because of the economic and social opportunities that they create.

Societal resilience and cohesion can be enhanced by better risk navigation and by ensuring a socially fair transition. Policies have an essential role in achieving ‘just transitions’. Linking better knowledge with action will require new knowledge, drawing on multiple disciplines and types of knowledge production. This includes evidence about the systems driving environmental pressures, pathways to sustainability, promising social initiatives, and barriers to change.

The European Green Deal, the Covid-19 shock and its ongoing financial crisis together point to an increasingly Vulnerable, Uncertain, Complex and Ambiguous (VUCA) world that Europe needs to navigate. This in turn raises questions about how we manage social vulnerability as well as design the future socio-economic model to steer the multiple transformations underway in Europe.

The European Green Deal with its green and digital agendas provides a robust starting point and must be further developed beyond 2024 to address the challenges linked to this VUCA world. Tackling the social dimension of this transition will be the key to ensuring continued support for these multiple transformations beyond five-year political cycles.

References


Conticini E., Frediani B. and Caro D. (2020) Can atmospheric pollution be considered a co-factor in extremely high level of SARS-CoV-2 lethality in Northern Italy?, Environmental Pollution 261 (June) 114465. DOI: 10.1016/j.envpol.2020.114465
EEA (2019b) EEA report; Unequal exposure and unequal impacts, Copenhagen, European Environment Agency.
EEA (2019c) EEA policy brief ‘Knowledge for a sustainable Europe, Copenhagen, European Environment Agency.
EEA (2019d) EEA report, Contaminants in Europe’s seas, Copenhagen, European Environment Agency.
EEA (2021a) EEA briefing, Growth without economic growth, Copenhagen, European Environment Agency.


IPCC (2018) Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty, Geneva, Intergovernmental Panel on Climate Change (IPCC).


All links were checked on 22 October 2021.